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ABSTRACT

This report is intended to provide vocational educators with information concerning competency-based vertical articulation that may be used to plan, organize, implement, and maintain articulation. The first main section of the guide examines the literature on articulation in terms of the seven fundamental principles of articulation. Discussed next are sources of competency-based curriculum materials that could be used in articulating occupational education provided at the secondary and community college levels. The third section, which is especially designed for those interested in vertical articulation, is an alphabetical listing of the major vocational curriculum areas along with a list of works that are considered the best resources regarding articulation in the given curriculum area. Concluding the report is a 10-page bibliography dealing with articulation in occupational education. (MN)

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Principles of and Sources for Vertical Articulation of Occupational Education from Secondary Schools to Community Colleges

by

Charles R. Doty*

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Abstract

The National Council for Occupational Education, an affiliate of the American Association of Community and Junior Colleges, 1984 annual national conference theme was articulation. The information in this article was presented at that conference to inform the participants of the basic principles of articulation and the information concerning vertical articulation, specifically competency based vertical articulation research and development projects between secondary schools and community colleges. (Additional information up to June 15, 1985 was added to this article.)

Introduction

An emphasis on vertical articulation of occupational programs between secondary schools and community colleges is long overdue. That emphasis is now being made by numerous councils,

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centers, and states. For example, the National Council for Occupational Education has established a Task Force, chaired by Ray Pietak, to identify information relating to high school/college articulation in high and emerging technologies. The Center for High School/College Articulation has been established by LaGuardia Community College in Long Island City, New York. A Yellow Pages Directory (1983) is available that lists existing articulation programs, types of articulation, contact person, and funding. And the National Center for Research in Vocational Education, Columbus, Ohio, is conducting a national survey to locate exemplary programs of articulation between secondary schools and community colleges. James Long is director of this project. The report should be available during the fall of 1985.

Articulation has many meanings, and variations, e.g. vertical or horizontal. For this article, articulation refers to competency based curricula for vertical articulation for occupational education between secondary schools and community colleges and technical institutes. Further, "Articulation is defined as the planned process within the educational system which facilitates the transition of students between the secondary and postsecondary levels of instruction and allows the students to move with continuity and without hindrance through levels of the education process" (National Advisory Council on Vocational Education, 1976, p. iii).

Kintzer (1983) in his explanation of the multidimensional problem of articulation and transfer stated, "community colleges must now give concerted effort to solving problems related to . . . area vocational schools. . . . Indeed, transfer and articulation can no longer be thought of solely in terms of the linear progression of community college students to four year institutions" (p. 1). The fact that vertical articulation between secondary schools and community colleges must be accomplished to aid the transfer of students, avoid program duplication, and use money efficiently is supported by persons such as Dillenbeck (1980), Parsons (1980), Bushnell (1978), Hoerner and Austin (1978), Tangman (1976), Burger (1976) and Enloe (1976).

Purpose of the Article

Anyone beginning an articulation effort should know that extensive information is available. The purpose of this article is to provide information concerning competency based vertical articulation which may be used to plan, organize, implement, and maintain articulation. To accomplish this purpose the basic principles of articulation will be given, sources where competency based curricula may be obtained are provided, and a thorough listing of reports on articulation from accounting to welding is shown. The criteria for selection of the articulation resources are that they are obtainable, that they have useful information for the practitioner, that they have a sound educational rationale,

and that the emphasis is on vertical articulation of occupational education between secondary institutions and community colleges/technical institutes.

Principles of Articulation

The person wanting a thorough knowledge of the principles of articulation of occupational education between Secondary schools and community colleges/technical institutions should examine the reports by Kintzer (1983, 1982), Christian (1982), McCormick, et al. (1980), Emerson (1980), Bushnell (1978), Hoerner and Austin (1978), University of Arizona (1978), Burger (1976), Tangman (1976), and Bender (1973). Of all the fundamental principles identified by these persons and others the following seven principles seem most critical.

1. The state administrations should support articulation in word, action, and funding.

As discussed by Bushnell (1976, p. 6) any attempts of collaboration between established power bases inevitably results in conflict. To overcome such conflict Louisiana passed legislation "that the Bureau of Vocational Education, Louisiana State Department provide the leadership" (Enloe, 1976, p. 1). Other states as New Jersey, Texas, and Florida have also passed such legislation. Without political support at all levels the probability of achieving successful articulation is greatly reduced. This principle is affirmed by McCormick, et al., 1980, p. 21; Artis, 1979, p. 14; Feddersen, 1978, p. 57; Bushnell (Dir.), 1978, pp. 8-10; National Advisory

Council on Vocational Education, 1976, pp. 19-25, 30; Burger, 1976, p. 26; Enloe, 1976, p. 1; and McKinnerney, 1974, p. 19.

2. The instructors at both institutions, i.e., secondary and postsecondary, must be involved in the decision making process initially.

This principle is cited repeatedly in such statements as follow:

> Administrators can lay groundwork and assign resources to allow articulation to occur; however, any real articulation will be done by instructors. (Hoerner & Austin, 1978, p. 36)
>
> The strength of Florida strategy for articulation is in the provision of opportunity for professional personnel who are providing service to students in any one component of public education to relate directly to their counterparts who are providing services to students enrolled in other components of the system. (Report for Florida Community College, 1981, p. 17)
>
> . . . any attempt to improve articulation without focusing on "people" will be unproductive. (Bushnell, 1978, p. 3)

Other authorities who cite this principle are Knight and Knight, 1985, p. 13; McCormick, et al., 1980, p. 16; Emerson, 1980, pp. 3-4; National Advisory Council on Vocational Education, 1976, p. 19; and McKinnerney, 1974, pp. 19, 21.

3. The persons, e.g., instructors, involved in the articulation process should be given credit for work load and/or compensation. Do not expect something for nothing.

This principle is probably the one most ignored within the literature. McCormick, et al. (1980, p. 28) and Hoerner and Austin (1978, pp. 36, 90, 93) cite the principle. Other reports do not contain a discussion of this aspect or infer that this duty is a part of the work load.

4. Provision of time and compensation must be made for technical upgrading of instructors. Instructors cannot be expected to pay for the upgrading.

McCormick, et al. (1980, p. 23), Hoerner and Austin (1978, p. 90), Burger (1976, p. 21) and McKinnerney (1974, p. 26) affirmed this principle by such statements as:

> Workshops were provided to instructors to assist them in developing instructional materials. This approach was taken to encourage instructors to teach those tasks which appeared on the task list. (Burger, 1976, p. 21)
>
> Teaching faculty must be assigned time and resources to work with advisory committees and counterparts (on school time not Saturdays) to work out specific details for any interinstitutional agreement. (Hoerner and Austin, 1978, p. 36)

5. A joint advisory committee should be established to provide communication between institutions and provide

recommendations on curriculum.

Statements as the following give credence to this principle.

> Program Articulation Committees should be established at the local level for each program area to develop and revise, on a regular basis, articulation agreements for each program area. This committee should consist of both secondary and post-secondary representatives. (McKinnerney, 1974, p. 19)
>
> W. Robert Sullins recommends joint vocational advisory committees both general vocational and specific curricula to aid articulation. (Hoerner & Austin, 1978, p. 35)

McCormick, et al. (1980, p. 20), Hoerner and Austin (1976, p. 89), Burger (1976, pp. 5, 21), and the National Advisory Council on Vocational Education (1976, p. 20) also identified this principle.

6. Articulation contracts must be written that specify exact responsibilities of the parties involved. The contracts should be reviewed annually.

This principle is documented by Knight and Knight (1985), Lawton and Magruder (1984), McCormick, et al. (1980, p. 19), and Artis (1979, p. 14). The Lawton and Magruder report Cooperative Agreements Study Report (1984) provides sixty-three examples that may be examined.

7. An atmosphere of "good faith" must prevail throughout the articulation process.

Knight and Knight (1985) titled their article for the Voc Ed Forum Effective Articulation is based on Trust. Dillenbeck made the following conclusion:

> The good-faith Articulation Process requires all institutions engaged be "equal" partners. That is, each institution, regardless of number of buildings and/or size or level of education, is equal to another within the organized consortium. If the college is aiming for curriculum collaboration with an increase in student flow, it cannot "market" the process with an attitude of an authoritarian or "big brother" nature. (1980, p. i)

This "good faith" principle is verified by many writers including McCormick, et al. (1980, p. 16), Artis (1979, p. 15), Bushnell (Dir.) (1978, p. 3), and Hoerner and Austin (1978, pp. 34, 91).

Competency Based Curriculum Sources

The reader who is going to be involved in competency based articulation should utilize several of the existing resources that provide information and up to date curricula. Four major sources are Open Entries, National Network, VTECS, and CORD.

An important source of current information is the newsletter Open Entries. This is a quarterly publication to

provide educators an information system for exchange of competency based instructional materials and methodology. A subscription is inexpensive.

A National Curriculum Network exists that can provide invaluable information on curricula. This Network consists of six national centers, each center serving a segment of the nation. One of the most valuable publications available from this Network is the Task Listing Catalog: Fifth Edition available from the East Central Network for Curriculum Coordination, Springfield, Illinois. This publication provides a national and international listing of competency based curricula available and addresses of other major producers of curricula.

Vocational-Technical Education Consortium of States (VTECS) specializes in competency based vocational technical education catalogs that contain performance objectives. Newly developed catalogs are available for aviation equipment technician, biomedical equipment technician, calibration/metrology technician, computer aided drafting technician, competer service and repair technician, laser technician, and robotics technician. Over 150 catalogs are now available.

The Center for Occupational Research and Development, Waco, Texas, is producing competency based high technology curricula. The reader should obtain the CORD Education Materials Catalog. CORD also produced Secondary-Postsecondary

Cooperation: 2+2 = A New Approach to Education. This publication is an extensive guide for articulating.

Vertical Articulation Sources

To present the articulation sources as conveniently as possible an alphabetical listing of the curricula and related topics is given. Under each curriculum or topic those relevant sources are listed. The purpose of this listing is to provide the reader the best resources concerning a specific aspect of articulation. For example, the person concerned with articulation of auto mechanics will find eight reports on this area. The person wanting to read the information on philosophy of articulation will find five major sources. Hopefully this listing will save the reader days/weeks of searching the literature, as was done by the writer.

Conclusions and Recommendations

The reader should now realize the large extent of information that is available concerning competency based vertical articulation between secondary schools and community colleges/technical institutes. The reader shoudl realize that violation of one or more of the principles given in this report will probably result in failure of any articulation attempt. The reader should also realize that articulation is inevitable because diminishing resources will eventually force educators to articulate to save money. Last, any person who becomes involved in articulation will soon recognize that one must

Accounting

Golen, S.
Student Guide ... Fountain Valley, Ca.
Walker, N.
Woelfer, C.

Administrative secretary

Student Guide ... Fountain Valley, Ca.

Agriculture

Arman, H. D.
Beckwith, M. M.
Byler, B. & Williams, D. L.
Fisher, H. S.
Nelson, R. J.
Volger, D. E. & Garrison, J. M.
Ward, D. L.

Air conditioning/heating

Enloe, G. M.
Walker, N.

Allied health

Boatman, R. and Huther, J. W.
Competencies for articulation: health occupations. Lincoln, Neb.
Enloe, G. M.
Examination of the health occupations. New York, N. Y.
Fitzpatrick, M. F. J.
Keeling, L. G.
McCosh, H. D.
Suver, J. A.
Walker, N.

Approaches to articulation

Articulation. Tallahassee, Florida
Articulation. Technical Education News.
Attenberry, P. H.
Bangasseri, Vi,et.al
Bender, L. W.
Bushnell, D. S.
Dillenbeck, K. J.
From high school to community college--
Hoerner, J. L. and Austin, G. L.
Kenny, E. & Carlson, K.
Lawton, R. E. & Magruder
Mills, J. D.

Accounting & articulation (cont.)

Myers, B.
Strom, L. H.
Strong, M. E.
Virginia Vocational Curriculum Center
Ward, D. L.
White, R. H.
Wolfe, E. R.

Automotive body repair

Dillenbeck, K. J.
D'Armond, J.
Henderson, W. E., Jr.
Pensacola Jr. College
Stewart, B.

Auto Mechanics

Burger, L. J. & McKeever, R.
Auto mechanics articulation ... Phoenix, Arizona
Auto mechanics articulation ... Tempe, Arizona
Competencies for articulation ... Nebraska
Stewart, B.
Walker, N.
Woelfer, C.

Automotive technology

Crouse, W. H. & Anglin, D. L.

Building maintenance

Pensacola Jr. College

Business

Pensacola Jr. College
Suver, J. A.
Ward, D. L.

Career ladders

Suver, J. A.

Carpentry

Competencies for articulation ... Nebraska

Child care

Suver, J. A.
Walker, N.

Civil engineering technology

Pensacola Jr. College

Clerical

Burger, L. J. & McKeever, R.
Walker, N.

Communications

Bangasser, Vi

Competency based education for community colleges

Dewald, M. R.
Eschenmann, K. K.
Hillison, J. H. and Vogler, D. E.
Lear, G. M., Jr.
Loomis, K. A.
O'Reilly, P. A.
Trapnell, G.
Vogler, D. E. and Hillison, J. H.

Computer assisted guidance program for articulation

Lockett, C. R.

Computer programming operations

Bangasser, Vi., et al.
Walker, N.

Cosmetology

Rice, L. M.
Walker, N.

Consumer and homemaking

Curriculum models ... Sacramento, Ca.

Coordinating secondary and post secondary institutions

Lieberman, J. E.
Lockett, C. R., Jr.

Criminal justice

Pensacola Jr. College

Curriculum improvement

Dallas, S.

Customer relations

Pensacola Jr. College
Walker, N.

Data processing

The improvement of occupational education ... Maryland

Distributive education

Matthias, T.
Mid-management guide ... Kansas
Student guide ...
Fountain Valley, CA.

Drafting

Articulation workshop in drafting. Maryland
Bangasser, Vi, et al.
Competencies for articulation: drafting. Lincoln, Neb.
Emerson, N. H.
Enloe, G. M.
Pensacola Jr. College
Woelfer, C.

Education in the 80's

Christian, N. K.

Electronics

Competencies for articulation: electronics. Lincoln, Neb.
Electronics articulation workshop. Maryland

Electronics (continued)

Estep, D. A.
Enloe, G. M.
Montgomery, J.
Ohlson, G.
Stewart, B.
Walker, N.

Engineering graphics technology

Shisler, C. L.

Environmental engineering technology

Pensacola Jr. College

Fashion merchandising

Walker, N.

Feasibility study for articulation

Petry, J. R.
A study for the articulation ...
Baton Rouge, La.
Warren, D. R. & Way, H. N.

General office practice

Student guide ...
Fountain Valley, Ca.

Graphic arts

Burger, L. J. & McKeever, R.
Walker, N.

Handicapped

Greenan, J. P.
Manley, F. W.

High technology

Knight, M. M.
McCash, H. D.

Horticulture technology

Hudson, C. L.
Taylor, S.
Zukowski, J.

Hotel and restaurant management

Walker, N.

Hydraulics-Pneumatics

Bangasser, Vi., et al.

Industrial education

Ward, D. L.

Industrial electricity

Bangasser, Vi., et al.
Henderson, W. E. Jr.
Shisler, C. L.
Walker, N.

Industrial relations

Pensacola Jr. College
Walker, N.

Law enforcement tract

Walker, N.

Legal assistant

Pensacola Jr. College

Longitudinal survey

Knoell, D. M.

Machine tool technology

Shisler, C. L.
Stewart, B.

Major appliance servicing

Walker, N.

Management

Pensacola Jr. College

Marketing

Pensacola Jr. College

Masonary

Henderson, W. E. Jr.

Math

Bangasser, Vi, et al.
Pensacola Jr. College
Walker, N.

Medical assistant

The improvement of occupational education ... Maryland

Medical secretary

Walker, N.

Models of articulation

Burger, L. J. & McKeever, R.
Jellison, H. M.
Lieberman, J. E.
McKinnerny, B. R.
Malone, E. W.
Manley, F. W.
Spanbauer, S.

Motorcycle repair

Walker, N.

National studies on articulation

Bender, L. W.
Bushnell, D. S.
Kintzer, F. C.
Tangman, R. S.

Occupational safety

Pensacola Jr. College
Walker, N.

Paramedic technology

Walker, N.

Performance standards

Walker, N.

Philosophy

Artis, M. J.
Bushnell, D. S.
Emerson, N. H.
Fedderson, W. H.
Gilli, A. C.

Plastics

Stewart, B.

Procedure manual for articulation

Articulation policies and procedures guide. South Carolina
Competencies for articulation: procedures manual. Lincoln, Neb.
Emerson, N. H.
Gallon, D. P. and Wattenbarger, D. I.
Opachinach, C. A. and Linksz, J. J.
Strain, J. A.
Project MAVE

Projects and reports on articulation

Burger, L. J.
Burger and McKeever
Emerson, N. H.
Kaufman, J. M.
Petry, J. R.
Report for Florida ...
Roland, R. L.
Shisler, C. L.
The improvement of occupational in Maryland
Warren, D. R. and Way, H. N.
Woelfer, C.

Recruitment

Hoppe, S. and Haddock, D.
Marketing and recruitment ... College and University

Respiratory therapy technican

Walker, N.

Secretarial science

Burger, L. J. and McKeever, R.
Emerson, N. H.
Enloe, G. M.

Secretarial science (continued)

The improvement of occupational education ... Maryland
Walker, N.
Woelfer, C.

Solar energy

O'Connor, K.

Travel agency operation

Student guide ... Fountain Valley, Ca.

Welding

Competencies for articulation ... Nebraska
Walker, N.
Whitworth, L. L.

examine philosophies and goals of education because there must be agreement between two institutions on philosophy and goals before articulation can be effectively implemented and maintained.

Of all the sources which could be read the Galambos' (1984) article Issues in Vocational Education is recommended as an overview of the objectives of vocational education and coordination between secondary and postsecondary institutions.

Kintzer (1983), Christian (1982), McCormick, et al. (1980), Emerson (1980), Bushnell (1978), Burger (1976), and Tangman (1976) can be read to gain a philosophical perspective of articulation. Bender (1973) could be read for a historical perspective. Specific directions/steps for conducting vertical articulation are in reports of Emerson (1980), Hoerner and Austin (1978) and the University of Arizona (1978). Lawton and Magruder (1984) should be consulted for example of articulation agreements. Last, the sources cited in this article should be used by the reader to locate information on specific areas concerning articulation. Do not waste time reinventing the wheel.

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Articulation policies and procedures guide. (1984). Greenville, South Carolina: Greenville Technical College and Greenville County Schools. (For information contact Ed Henderson, OE, Articulation Coordinator, Greenville County Schools, Box 2848, Greenville, South Carolina 29602; (803) 242-6450.

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Articulation. (1980, March-April). Technical Education News. 39 (4).

Articulation workshop in drafting. (Final report). (1977). Maryland: Catonsville Community College. (ERIC DOCUMENT REPRODUCTION SERVICE NO. ED 157563)

A study for the articulation of competency based curricula for the coordination of vocational-technical education programs in Louisiana. (1976). Baton Rouge, Louisiana: State Division of Vocational Education. (ERIC DOCUMENT REPRODUCTION SERVICE NO. ED 124771)

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Automotive mechanics articulation. (1978). Phoenix, Arizona: Arizona State University, Tempe Division. (ERIC DOCUMENT REPRODUCTION SERVICE NO. ED 174832)

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Beckwith, M. M. (1980). Science education in two year colleges: agriculture and natural resources. Los Angeles, Ca.: Center for the Study of Community Colleges, ERIC Clearinghouse for Junior College Information. (ERIC DOCUMENT REPRODUCTION SERVICE NO. ED 180567)

Bender, L. W. (1973). Articulation of secondary and post-secondary occupational education programs. Columbus, Ohio: National Center for Research in Vocational Education. (ERIC DOCUMENT REPRODUCTION SERVICE NO. ED 090392)

Boatman, R. & Huther, J. W. (1974). Allied health education transfer credit: recommendation of the North Carolina articulation project. Chapel Hill, N.C.: A joint publication of the North Carolina State Department of Community Colleges and North Carolina University. (ERIC DOCUMENT REPRODUCTION SERVICE NO. ED 110751)

Bushnell, D. S. (1978, March-April). Articulating vocational education at the postsecondary level: a national study. Technical Education News, 37 (3), 13-14.

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Burger, L. J. (1976). Secondary-post secondary curriculum articulation project for vocational technical education in Minnesota, final report. Minneapolis, Minn.: Minnesota Research Coordinating Unit for Vocational Education. (ERIC DOCUMENT REPRODUCTION SERVICE NO. ED 133586)

Burger, L. J. & McKeever, R. (Project Directors). (1975). Developing articulated high school and post high school vocational technical curricula in Minnesota. final report. Minneapolis, Minnesota: Research Coordinating Unit for Vocational Education, 1975. (ERIC DOCUMENT REPRODUCTION SERVICE NO. ED 118749)

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